



hubbell industrial controls, inc.

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## EUCLID™ DC RELAYS

### MILL DUTY CONSTRUCTION, 600 VOLTS MAXIMUM, NEMA RATED

### General Information

EUCLID™ DC RELAYS are built to withstand severe service. They are recommended for use on heavy industrial equipment, such as dc drives as cranes and mill auxiliaries.

### Application

#### ● VOLTAGE RELAYS

“VR” voltage relays are used for reversing-plugging controllers with Emergency or Service Dynamic Braking, and for armature shunt contactors on multi-step slowdown circuits.

“JK” voltage relays are used for initiating high speed lowering on hoist controllers.

“LSR” is a Limit Switch Relay standard for hoist control panels with power limit switch.

“NP” is a Non-Plugging Relay for compound and shunt motors.

“PR” Plugging Relays are rectifier type used on dc reversing plugging control panels to limit motor torque during plugging operations.

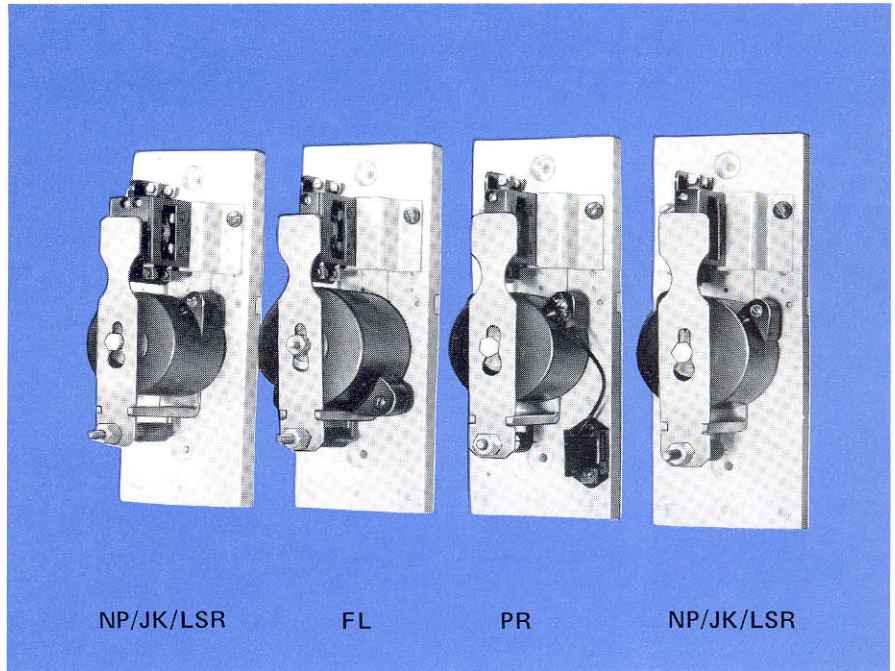
#### ● CURRENT RELAY

“FL” Field Loss relay is recommended to protect against loss of field power on compound or shunt motors.

### Description

The dc relay line uses the latest technology in molded plastic material for parts requiring high strength and insulating qualities.

Completely front-mounted, front-wired, the glass reinforced polyester base has excellent dielectric properties. These relays are suited for either angle iron frame mounting or steel panel mounting. The magnet coil is completely encapsulated.



The contacts are bridge-type, double-breaking, silver cadmium oxide consisting of one (1) normally open (N.O.) and one (1) normally closed (N.C.) set of contacts in a common assembly block.

### Adjustment Range

For Type VR, JK, LSR, and NP

Relays. Pick-up is adjustable between .20 and .60 of rated coil voltage. Relay Drop-out is adjustable between .06 and .35 of rated coil voltage. Pick-up and Drop-out adjustments are not independent. Ratio of Drop-out setting to Pick-up setting of relay must be between .30 and .60.

CONTACT RATINGS									
Electrical Contacts are rated in accordance with NEMA Standard ICS-2-125 (B600 and P600 Table Ratings).									
AC	Maximum Continuous Amperes	Maximum Make and Break Current-Amperes							
		120V		240V		480V		600V	
		Make	Break	Make	Break	Make	Break	Make	Break
B-600	5	30	3.0	15	1.5	7.5	.75	6	0.6
DC	Maximum Continuous Amperes	Maximum Make and Break Current-Amperes							
		125V		250V		600V			
		Make	Break	Make	Break	Make	Break	Make	Break
P-600	5	1.1	1.1	.55	.55			0.2	0.2

Contacts consist of one Contact Block Housing, one (1) Normally Open, (N.O.) and one (1) Normally Closed, (N.C.) set of contacts in a common assembly, plus Mounting Hardware Part Number - - 5320-68040-003.



**VOLTAGE RELAYS**  
230/250 System Voltage

TOTAL NUMBER OF CONTROL CIRCUIT CONTACTS		PART NUMBER	FUNCTION	RELAY SETTING
N.O.	N.C.			
1	1	5320-58895-002	"LSR" Relay for DC Hoist Controller with Power Limit Switch	P.U. 55V
2	2	5320-58895-102		
1	1	5320-58895-001	"JK" Relay for DC Hoist Controller	P.U. 105V.
2	2	5320-58895-101		
1	1	5320-58895-006	"NP" Relay for Rev. Non Plugging Controller	Min. D.O. 20V. 30V.
2	2	5320-58895-105		
1	1	5320-58895-005	"VR" Relay for Travel Controller with Dynamic Braking	Min. D.O. 40V.
2	2	5320-58895-104		

**PLUGGING RELAYS**  
230/250 System Voltage

1	1	5320-58896-002	"PR" Plugging Relay for Single Point, Plugging Systems*	D.O. 20V.
1	1	5320-58896-004	"PR" Plugging Relay, First Point for Two Point Plugging Systems	D.O. 130V.

\*Also used for Second Point for Two Point Plugging Systems

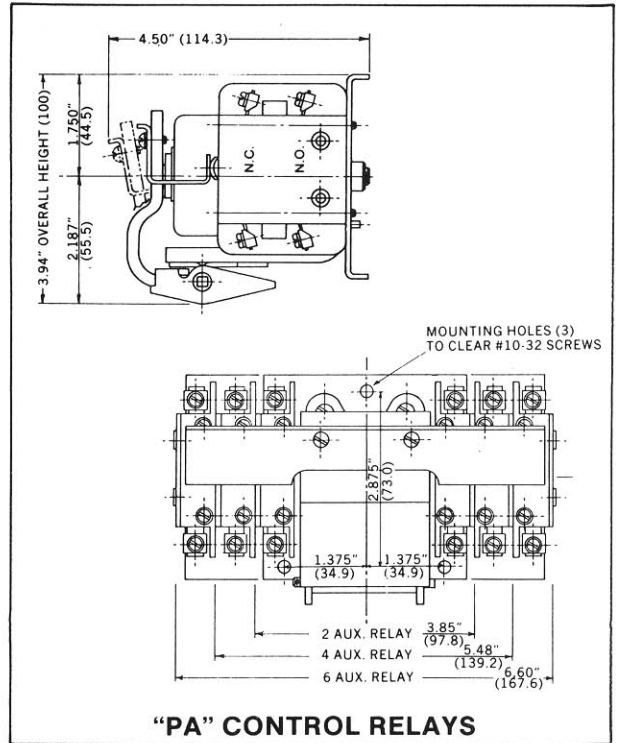
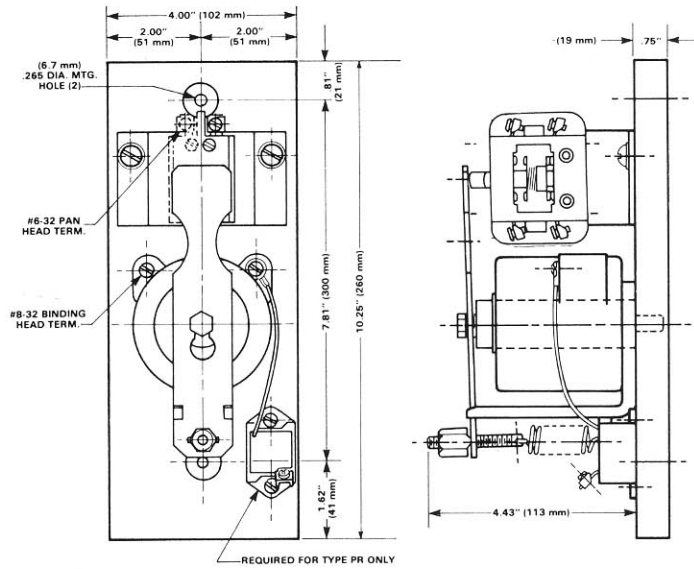
**"FL" CURRENT RELAYS**  
(FIELD LOSS)  
230/250 System Voltage

CURRENT PICK-UP RANGE	MAXIMUM CONTINUOUS CURRENT	PART NUMBER WITH 1 N.O. & 1 N.C. SET OF CONTACTS
.22 - .41	.60	5320-59551-001
.25 - .47	.75	5320-59551-002
.32 - .61	.94	5320-59551-003
.39 - .75	1.20	5320-59551-004
.50 - .94	1.50	5320-59551-005
.63 - 1.20	1.90	5320-59551-006
.81 - 1.53	2.40	5320-59551-007
1.01 - 1.92	3.0	5320-59551-008
1.27 - 2.42	3.7	5320-59551-009
1.61 - 3.05	4.8	5320-59551-010
1.99 - 3.78	6.0	5320-59551-011
2.43 - 4.62	7.3	5320-59551-012
3.42 - 6.49	9.2	5320-59551-013
3.98 - 7.56	11.7	5320-59551-014
5.48 - 10.39	15.0	5320-59551-015
6.63 - 12.60	19.0	5320-59551-016
8.11 - 15.40	24.0	5320-59551-017
13.70 - 26.0	41.0	5320-59551-018
27.4 - 52.0	82.0	5320-59551-019

Relay Pick-up is adjustable between .35 and .65 of rated coil current. Relay Drop-out is adjustable between .10 and .13 of rated coil current. Pick-up, and Drop-out adjustments are not independent. The ratio of Drop-out setting to Pick-up setting of the relay must be between .21 and .30

**DIMENSIONS**

(Do not use for construction purposes)



"PA" CONTROL RELAYS

**CONTROL RELAYS**  
Compact Multipole "PA"

Total Number of Control Circuit Contacts		PART NUMBER	
N.O.	N.C.	115/125 Volts	230/250 Volts
2	2	5320-58990-101	5320-58990-105
4	4	5320-58990-102	5320-58990-106
6	6	5320-58990-103	5320-58990-107



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